

WHAT IS CLAIMED IS:

1. A process for producing a polyurethane molding comprising:
  - a) conveying in shot operation at least one isocyanate component and at least one polyol component for a predetermined time-interval  $\Delta t$  into a mixing chamber at predetermined volumetric flow-rate  $\dot{V}_{s/iso}$  for the isocyanate and  $\dot{V}_{s/polyol}$  for the polyol and predetermined pressure  $p_{s/iso}$  for the isocyanate and  $p_{s/polyol}$  for the polyol,
  - b) mixing the isocyanate and polyol in the mixing chamber to form a polyurethane reaction mixture, and
  - c) discharging the polyurethane reaction mixture into a mold, and

in which

  - (1) prior to a), the isocyanate and polyol are conveyed in circuit through circulation lines between the mixing chamber and their respective storage vessels,
  - (2) the pressure of the isocyanate and of the polyol are measured by means of pressure sensors and transmitted to a control device,
  - (3) the volumetric flow-rates of the isocyanate and polyol are adjusted while being conveyed through the circulation lines in such a way that the pressure of each of the isocyanate and polyol in the circuit corresponds to the predetermined pressures  $p_{s/iso}$  and  $p_{s/polyol}$  of the components for shot operation, and
  - (4) the volumetric flow-rates  $\dot{V}_{s/iso}$  and  $\dot{V}_{s/polyol}$  of the isocyanate and polyol are adjusted by the control device during change-over from circulatory mode of operation to shot operation by adjustment of drive units of metering elements for the isocyanate and polyol.

2. The process of Claim 1 in which reactive components and/or additives in addition to the polyol and isocyanate are employed.
3. The process of Claim 2 in which a dye is employed.
4. The process of Claim 1 in which the pressure of the isocyanate and of the polyol  
5 both during recirculation and during shot operation lie within a range from 3 bar to 600 bar.
5. The process of Claim 1 in which the pressure of the isocyanate and of the polyol both during recirculation and shot operation lie within a range of from 50 bar to 350 bar.
6. The process of Claim 1 in which the pressure of the isocyanate and of the polyol  
10 both during recirculation and shot operation lie within a range of from 100 bar to 250 bar.
7. The process of Claim 1 in which the volumetric flow-rate of the isocyanate and of the polyol are registered permanently by a volumetric-flow meter, the flow-rates are signalled to the control system by means of a pulse line and any flow-rate exceeding a set  
15 tolerance which arises during a shot is ascertained and corrected for subsequent shots.